

REMARKS

In view of the above amendment, applicant believes the pending application is in condition for allowance.

The Office Action and prior art relied upon have been carefully considered. In an effort to expedite the prosecution the following comments are provided. No changes to the claims are believed necessary.

Claims 1-4 were rejected under 35 USC 103(a) as unpatentable over Couffet et al (US 5,397,877) in view of Maeyama (US 6,195,525).

Couffet et al (US 5,397,877) relates to a device for the induction heating of flat metallic products with the aid of electrical coils 14, 14' arranged on either side of the large faces of the product to be heated. The inductors are mechanically independent of each other and they are arranged symmetrically in relation to the median plane of the product (see col.2 lines 11-13). In effect the only commonality between Couffe and the invention is their mutual objective of homogenous heat treatment.

Contrary to the heating inductors of the invention, according to Couffet et al. the inductors do not surround the flat product to be heated. The problem of overheating of the edges of the strip compared to its central part is neither considered nor solved by Couffet et al.

Couffet et al. does not show an inductor which surrounds the strip and which includes, inside its coils, two magnetic field deflectors, masking the inductor coils at the edges of the strip for the purpose of managing temperatures at the edges of the flat metal product.

The secondary reference to Maeyama (US 6,195,525) is lacking in several important respects. Most importantly Maeyama does not teach the use of deflectors as in the claimed invention. Rather, the reference attempts to solve a prior art deficiency. Namely, as set forth in column 1, lines 56-59: "-- there has been a technical problem that the distance between the core and the heating roller becomes irregular and hence, irregular heat generation occurs at the time of heating the heating roller."

To resolve the problem, Macyama discloses in col 2, lines 26-42 and in Fig 1(a):

--as shown in FIG. 1(a), in an electromagnetic induction heating device 2 which heats an object to be heated 1 which has at least an electromagnetic induction heat generating layer 1a, the improvement is characterized in that the heating device 2 includes a magnetic core 3 made of magnetic material which is disposed in an opposed manner toward an electromagnetic induction heat generating layer 1a of the object to be heated 1 and an exciting coil 4 which is wound around this magnetic core 3 and generates a fluctuation magnetic field H which penetrates the electromagnetic induction heat generating layer 1a, and a movable core 5 which can move relative to the object to be heated 1 and can change the intensity of the fluctuation magnetic field H which penetrates the electromagnetic induction heat generating layer 1a is provided to at least a portion of the magnetic core 3 (emphasis added).

Accordingly, Macyama does not employ an interposing deflector for modulating the heat introduced into the band product being treated. In summary, contrary to the claims, Macyama:

- Is directed to induction heating by transverse flux not longitudinal flux as in the invention.
- Shows inductors that do not surround the heated product.
- Teaches the use of a movable core 5 instead of the claimed fixed deflectors that simplify an industrial installation and avoid the necessity of regulating the position of movable elements (see page 3, lines 21 *et seq* of the present specification).
- The reference neither shows nor suggests the claimed “two magnetic field deflectors located inside coils of the inductor, the shape and arrangement of the deflectors masking the inductor coils at edges of the strip.”

Thus, the combination of references fails to disclose the claimed elements in independent claim 1 much less the more specific dependent claims 2-4 that comprise an apparatus that is patentable and is capable of managing the temperature at the edges of the band product being heated in a manner not possible by the cited art.

In view of the above, consideration and allowance are, therefore, respectfully solicited.

In the event the Examiner believes an interview might serve to advance the prosecution of this application in any way, the undersigned attorney is available at the telephone number noted below.

The Director is hereby authorized to charge any fees, or credit any overpayment, associated with this communication, including any extension fees, to CBLH Deposit Account No. 22-0185, under Order No. 21029-00280-US from which the undersigned is authorized to draw.

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Respectfully submitted,

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